

**REMARKS**

For convenience in responding to the various parts of the Action, the headings used in the Action are used below.

***Specification***

The abstract of the disclosure is objected to because it is more than one paragraph. The abstract has been amended and is now one paragraph.

The disclosure has been objected to because of an inconsistency between the description of Example 11 and the data for Example 11 in Table 1-a. The inconsistency between Example 11 and the data for Example 11 in Table 1-a resulted from an error in the English translation of Example 11 of International Patent Application No. PCT/JP00/05692, of which the present application is the national stage. The description of Example 11 on page 64 beginning in line 21 is amended herein. To support this amendment, applicants are submitting herewith a correct translation of Example 11 of International Patent Application No. PCT/JP00/05692 and a statement of Shuji Sawada that the translation is accurate.

The Action requires a new title that is "indicative of the invention to which the claims are directed." The title has been

amended to: --BIAXIALLY ORIENTED FILM HAVING SPECIFIED MICRO PROTRUSIONS--. If this title is not acceptable, applicants respectfully request that the Office suggest an acceptable title.

***Claim Rejections - 35 U.S.C. §112***

Claim 17 is rejected under 35 U.S.C. §112, second paragraph, for being indefinite because of the use of the recitation "essential components". This rejection has been avoided by amending claim 17 to delete the recitation "as the essential components".

The rejection of Claims 20-21 as being indefinite under 35 U.S.C. §112, second paragraph, is respectfully traversed. There is no inconsistency with the recited relationships. If  $W_B$  is 0, the relationship  $10 \leq W_A - W_B \leq 40$  (in claim 20) requires  $W_A$  to be in the range of 10-40 (which is within the range of 5-50 for  $W_A$ ).

***Claim Rejections - 35 U.S.C. §103***

Claims 1-5, 11-15, 17-19, 22 and 27-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tojo et al. (U.S. Patent No. 5,965,233) ("Tojo").

Claims 1-9, 11-15, 17-19, 23-24 and 30-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto et al. (EP 0522758) ("Yamamoto") in view of Tojo.

Claims 1-6, 11, 14-15, 17, 20-22, 27 and 31-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shinonome et al. (EP 0398075) ("Shinonome") in view of Tojo.

Claims 1-2, 9-10, 14-16 and 25-28 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kinoshita et al. (U.S. Patent No. 5,527,594) in view of Tojo.

Initially, it is noted that to ensure a proper interpretation of the claims, claim 1 has been amended to recite that the biaxially oriented film of the invention comprises a film of a polymer alloy composed of polyester (polymer 1) and a thermoplastic resin (polymer 2) other than the polyester.

Applicants respectfully submit that the cited references alone, or in combination, are insufficient to support a case of *prima facie* obviousness of the rejected claims.

(1) Tojo et al.

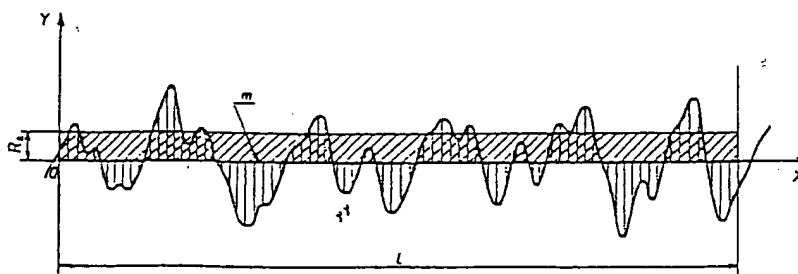
Tojo does not disclose a film of a polymer alloy as recited in the claims. Tojo only discloses a composition of polymer particles

and a hydrophilic polymer. A polymer alloy does not include a film of a polymer in which other polymer particles are dispersed. (See, for example, page 5, line 21, to page 6, line 1, of the specification). For this reason alone, the 35 U.S.C. § 103(a) rejection based on Tojo is improper and should be removed.

Moreover, a feature of the present invention is micro protrusions having a specified height and a specified density formed on the surface of the polymer alloy film by biaxially orienting the polymer alloy film. (Refer to page 22, line 22, to page 23, line 2). As a result of these micro protrusions, the film of the present invention exhibits superior electromagnetic conversion characteristics, travel durability, and travel characteristics on magnetic heads when used as a base film for a recording magnetic medium. (Refer to page 72, lines 8 to 11).

Tojo does not disclose the claimed specified height of micro protrusions. The Action states in paragraph 13 that "It is the examiners [sic] position that the centerline average surface roughness is roughly equivalent to the applicants [sic] claimed height of the protrusions". However, an Examiner's "position" is not a sufficient basis to support a rejection without reasons

articulated in the Action supporting that position. See *In re Sang-Su Lee*, 277 F.3d 1338, 1345-46, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002). Additionally, centerline average surface roughness ( $R_a$ ) is merely an average roughness and does not disclose anything about the range of height of the individual protrusions. Below is a chart which illustrates the relationship between a film surface and a value of  $R_a$ . As shown in the chart,  $R_a$  does not specify the height of the protrusions and is not "roughly equivalent" to the claimed height of the protrusions. It is also noted that the coarse protrusions in the present invention are protrusions having a height of over 50 nm (page 24 line 5). Tojo, however, defines coarse protrusions as "protrusions having a height of not smaller than 0.5 $\mu$ m (500nm)" (column 8 lines 42-43). Thus, it would have been apparent to the art-skilled person that the fineness of the protrusions of Tojo is much coarser than that of the protrusions of the present invention.



To produce the film of the present invention, for example, polymer 1 and polymer 2 are mixed and extruded to form a polymer alloy, the polymer alloy is extruded from a slit die and cooled to obtain an unstretched film, and the unstretched film is biaxially stretched. (Refer to page 41, line 1, to page 42, line 4). (Hereinafter the method for producing the film of the present invention is referred to as a "polymer alloy method"). On the other hand, the method for producing the film of Tojo is a coating method, i.e., coating of a composition of polymer particles and hydrophilic polymer on a base film. Tojo does not disclose a polymer alloy method. As described in the specification of the present application on page 3, lines 10 to 21, when a coating method is used, coarse protrusions are inevitably formed by aggregation of particles.

As also described in the specification of the present application (page 2, lines 10 to 20), reduction of the size of a recording signal and increasing of recording density are being required more frequently. Especially, suitability of a base film for use with an MR head is strongly required. The film of the present invention satisfies such requirements, whereas the film of

Tojo will not satisfy such requirements. At the time of the invention of Tojo, the above mentioned requirements for a base film were not as important as at the time of the present invention. As is described in Tojo, the magnetic recording apparatus used in Tojo is a conventional 8mm video tape recorder. No new type recorder using an MR head is disclosed in Tojo.

The Action also includes the following misunderstandings. In paragraph 22 of the Action, it is stated "[w]ith respect to claim 17, wherein the applicant requires the base layer to comprise the polymer 1 or the polymer alloy composed of polymer 1 and polymer 2. Tojo teaches that a suitable material for the base layer is biaxially oriented PET, which is included in the first film layer (column 3, lines 55-62)". Tojo discloses hydrophilic polyester as a hydrophilic resin for the first film layer (column 6, lines 8-26) and PET as a thermoplastic resin for the base layer (column 3, lines 49-57). A thermoplastic PET is not hydrophilic, and so a hydrophilic polyester does not include a thermoplastic PET.

In paragraph 24 of the Action it is stated that "[r]egarding claim 22, wherein the applicant requires the base layer to comprise substantially no inert particles. Tojo specifically teaches that

the base layer can comprise substantially no inert particles (column 4, lines 22-24)". But in claim 22, the layer which does not contain inert particle is the A layer, which corresponds to the first film layer of Tojo, not the base layer. Tojo is silent about inert particles in the first film layer.

Tojo does not support a rejection of any of the claims of the application under 35 U.S.C. § 103(a) and removal of the rejection is required.

(2) Yamamoto et al. in view of Tojo et al.

Yamamoto, like Tojo, also fails to disclose the specified height and specified density of micro protrusions recited in the claims.<sup>1</sup> Since Tojo, as explained above, does not disclose or suggest the specified height of the micro protrusions of the present invention, the proposed combination of Tojo with Yamamoto will not result in the present invention.

It is stated in paragraph 32 of the Action that "[i]t is the examiners [sic] position that the average surface roughness of a film is equivalent to the average height of protrusions that extend

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<sup>1</sup>It is admitted in paragraph 33 of the Action that Yamamoto fails to disclose the required number of protrusions.



from the films [sic] surface". However, as explained above, the Examiner's position is not a proper basis for rejection and average surface roughness is not equivalent to and does not otherwise indicate the height of the protrusions.

Regarding the number of protrusions, according to the examples of Yamamoto (Table 5 and 6), the dispersed particle diameter of Yamamoto is 0.20 to 0.41  $\mu\text{m}$  (200 to 410 nm). In the specification of the present invention (page 8, line 22, to page 9, line 6), on the other hand, it is stated that "[t]he polymer 2 of the present invention preferably exhibits good affinity (compatibility) for the polymer 1..., a structure (for example, a poorly-dispersed polymer domain) having a diameter of 200 nm or more is not observed, which is not due to an additive such as additive particles." Therefore, a person of ordinary skill in the art would not expect the film of Yamamoto to be capable of having the fine structure required by the claims of the present application.

Additionally, the content of thermoplastic resin for forming protrusions is 0.01 to 3 wt% in Yamamoto (page 3 lines 18-20), which is smaller than the content in the present invention of 5 to 50 wt% (page 24 lines 18-19). Even if the content of thermoplastic

resin for forming protrusions is same, the coarser protrusions, i.e. bigger protrusions, will form less protrusions in number because one protrusion needs more resin. Moreover, when the content of thermoplastic resin for forming protrusions is smaller and protrusions are coarser, the number of protrusions must be much smaller, therefore, the number of protrusions in Yamamoto would have been expected to be much smaller than that of the present invention.

For the above reasons, the person of ordinary skill in the art would not have been provided with a proper motive to modify the film of Yamamoto as proposed in the Action. Lack of proper motivation to modify Yamamoto as proposed in the Action is also shown by the fact that the method for producing the film of Tojo is a coating method whereas that of Yamamoto is a polymer alloy method. Tojo does not disclose and does not suggest how to control the number of protrusions in a polymer alloy method.

(4) Shinonome et al. in view of Tojo et al.

Shinonome also does not disclose either the required height or the required density of micro protrusions of the claims of the present invention. The Office states in paragraph 58 of the Action

that "[i]t is the examiners [sic] position that Ra is an equivalent to the average height of protuberances formed on the surface of the film". But as explained above, the Examiner's position is not prior art and Ra does not show the height of the protrusions.

Additionally, according to the examples of Shinonome (page 6, line 55), the distributed particle diameter of Shinonome is in the order of 0.5 to 1.0  $\mu\text{m}$  (500 to 1000 nm). A person of ordinary skill in the art would not expect the film of Shinonome to be capable of being modified as proposed in the Action to have the fine structure required by the claims of the present application and there would not have been a proper motivation to so modify the film of Shinonome.

The person in the art also would not have been motivated to combine Shinonome and Tojo because the method of Tojo is a coating method and that of Shinonome is a polymer alloy method. Tojo does not disclose how to control the number of protrusions in a polymer alloy method.

(5) Kinoshita et al. in view of Tojo et al.

Kinoshita discloses magneto optic recording media (column 24 lines 18-25). The Office states in paragraph 80 of the Action that

"both Tojo and Kinoshita are utilized for the same purpose (magnetic tape)". This is not correct. As is well known, a magneto optic recording media is one type of optical medium, not a magnetic medium. A magneto optic recording medium uses a laser beam head, not a magnetic head, in recording or reproducing. The recording and reproducing mechanism of a magneto optic recording medium is completely different from that of a magnetic medium and the desired and required properties of these media are also different.

In view of these differences, the combination of Kinoshita with Tojo will not support the rejection. Moreover, a person of ordinary skill in the art would not have been motivated to combine Kinoshita with Tojo because of the above-noted differences.

Removal of the 35 U.S.C. § 103(a) grounds of rejection is in order.

The foregoing is believed to be a complete and proper response to the Office Action dated March 21, 2003, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone

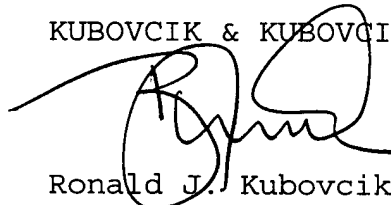
interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

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Attachments: Translation of Example 11  
Statement of Accuracy of Translation by Shuji Sawada

STATEMENT

I, Shuji Sawada, hereby state that I am competent in both the Japanese and English languages and that the attached English language document is an accurate translation of Example 11 of International Patent Application No. PCT/JP00/05692.

Date: July 8, 2003

Signature: Shuji Sawada

#### EXAMPLE 11

As shown in Table 1, the polymer for the A layer was changed to a blend polymer of 20 weight percent polysulfone and 80 weight percent polyethylene terephthalate, and the polymer for the B layer was changed to a blend polymer (containing 0.05 weight percent spherical silica particles having an average particle diameter of 0.3  $\mu\text{m}$ ) of 10 weight percent polysulfone and 90 weight percent polyethylene terephthalate as in EXAMPLE 9, and a biaxially oriented film was prepared by a stretching method according to EXAMPLE 1. The thicknesses of these layers were 2  $\mu\text{m}$  for the A layer and 4  $\mu\text{m}$  for the B layer.

This biaxially oriented film exhibited, as shown in Table 2, reduced dropout and superior properties as a base film for magnetic recording media, such as electromagnetic conversion properties and travel durability.